SEPTEMBER 1982 $2.50

Business and commercial Aviation

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B/CA Analysis®: Mitsubishi's Diamond I

Remote Navcom by Bendix

B/CA Salary Survey

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CLEARANCE DELIVERY

Our readers will recognize the *Clearance Delivery* photograph this month as the one we used to pace our three-part article entitled "Justifying Corporate Aircraft," which was published in the July and August 1982 issues of B/CA.

The reaction to that justification article has been gratifying. So many people have requested it, in fact, that we are revising our procedure for ordering reprints.

Due to the number of people who want a justification kit, which includes a reprint of Parts I, II and III of "Justifying Corporate Aircraft," plus two copies of each of the three worksheets described in the article, we are able to offer them directly from B/CA's editorial offices at Westchester County Airport for a special price of $10. Considerable discounts are available for quantity orders.

To take advantage of this special $10 price, mail your request for a justification kit directly to David W. Almy, B/CA, Hangar C-1, Westchester County Airport, White Plains, N.Y. 10604.

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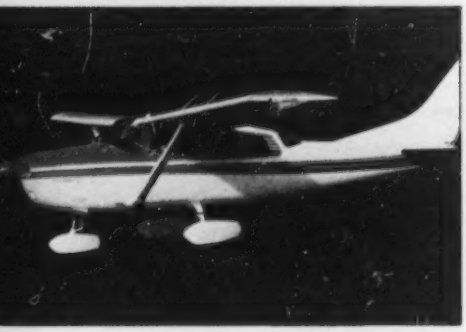

The versatility of the Cessna Turbo Stationair has made this utilitarian aircraft popular with all types of operators, including the businessman-pilot.

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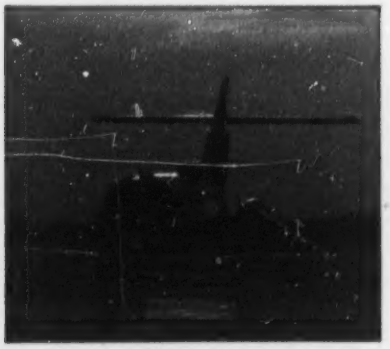

Readers who mailed $25 to Ziff-Davis Publishing Company's Pratt Station address will receive two kits as well as our condolences for the higher costs of processing reprint requests through that office.

THE COVER
Mitsubishi Aircraft International provided the picture of the Diamond I. The photo of Bendix's new "X-line" navcom control head was taken by George C. Larson, and Mike Perry is responsible for the art depicting the B/CA 1982 salary survey.

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Business and commercial Aviation

B/CA Salary Survey: 1982

Utilization is down slightly compared to last year, and many flight departments have suffered wage cuts and freezes, but the overall rate of compensation for flight department employes is holding steady.

by David W. Almy

The economy (to loosely paraphrase the cabin announcement made by the captain of a British Airways 747 after his engines had quit while flying through volcano dust over Southeast Asia last spring) has "hit a spot of bother."

Times, they are indeed tough, with B/CA's ninth annual salary survey showing a statistically insignificant *overall* increase in the rate of compensation for U.S. corporate pilots. Literally dozens of companies that B/CA contacted in late spring reported wage freezes while some others reported 5- and 10-percent companywide salary cuts. The friendly skies, at least under the current economic climate, have not been all that friendly of late.

The information contained within B/CA's Salary Survey must be tempered by several extenuating factors. While many companies are experiencing hard times and have frozen or reduced wages, many *are* doing well, and they have reported significant increases. The data on the following pages are averages of the good *and* the bad. Hence, the appearance of a leveling off in salary increases. In analyzing your company's compensation package, first consider the overall economic health of your organization. If the company is doing well, it only stands to reason that the company's flight department should be compensated for its contribution to the cause.

As this is being written, the unemployment rate in the United States remains just shy of 10 percent—the highest rate since World War II. Entire industries have practically closed up shop and gone home with the hope that conditions will improve in the near future.

Most of these companies operate aircraft. Heavy industry, manufacturing, construction, petroleum and mining have been particularly hard hit. Management's response to this downturn, in most cases, has been a slight reduction in pay. While many companies within B/CA's control group of 100 flight departments reported 10-percent pay cuts, only three flight departments have been disbanded.

Despite the hard times, most of the people we talked to were optimistic about the long term, and were looking at the positive side of the economic coin. One chief pilot remarked that his company's pay freeze, "sure beats the hell out of a 10-percent cut."

And while the general economy is struggling to keep its collective head above water, there are spots of success. One chief pilot with three Gulfstream IIs reported that utilization was up rather

than down. Their aggressive management had taken the position that when things get tough, the tough should get out of their offices and beat the bushes with a vengeance. In disclosing part of the company's strategy, the chief pilot also reported that 70 percent of their passengers were customers.

Another operator reported that the company's main-line sales production has leveled off, so management has decided to diversify.

This has bolstered the importance and contribution of the flight department and, incidentally, created a very healthy outlook for both the company's long- and short-term economic future. That particular flight department recently received a 10-percent raise.

The overall effect of the economy (albeit with spotty bright areas) on business aviation then, is in rather sad shape, with most economists predicting only gradual improvement through late 1982 and 1983.

On the other hand, this fact does not bode well for the economic health of U.S. pilots since they are, in some cases, among the first to see pink slips when cutbacks begin. On the other hand, the recession has, in part, fostered a sharp decrease in the inflation rate, which increases the buying power of pilots who are still counted among the comfortable middle and upper brackets of the nation's pay scale.

The consumer price index—the United States' basic index of how much more it takes to survive today than it did yesterday—is up 5.2 percent since last year's review. That number is down from the 19.5-percent record increase of two years before, and the continuing trend (the annual increase in the CPI for all of 1982 and 1983 is expected to be less than 6 percent) is good news for everyone.

The bad news is that along with the drop in inflation, there has been a drop in the rate of increase of compensation, so the headway that the pilot community is making is somewhat marginal.

Little Change

The data in our ninth annual salary survey are based on a sample of 489 pilot and mechanic salaries from across the United States. Our typical flight department has changed only slightly from last year. The number of pilots per aircraft was down slightly to 2.59 from 2.62 last year, and the number of hours flown per aircraft per year dropped from 621.9 to 591.7 (a decrease of 4.9 percent), reflecting the drop in utilization that many companies reported due to the recession. There were 1.06 mechanics per aircraft this year.

The vast majority of flight departments surveyed offered major medical and long-term disability benefits for their em-

Figure 1

Comparative Salaries 1981/1982

	1981	1982	% Annual Increase (Decrease)
Heavy Jet (over 30,000 lb)			
Chief Pilot	$60,000	$61,500	2.5
Captain	48,993	48,959	.0
Copilot	37,700	31,340	(16.9)
Chief of Maintenance	36,750	34,615	(5.8)
Mechanic	27,773	25,710	(7.4)
Medium Jet (up to 30,000 lb)			
Chief Pilot	$45,517	$46,875	3.0
Captain	34,460	36,400	5.6
Copilot	27,920	27,082	(3.0)
Chief of Maintenance	30,292	33,955	12.0
Mechanic	22,400	23,694	5.8
Light Jet (below 12,500 lb)			
Chief Pilot	$36,500	$38,610	5.8
Captain	33,600	32,600	3.0
Copilot	21,000	22,000	4.8
Chief of Maintenance	30,000	31,000	3.3
Mechanic	22,000	21,000	(4.5)
Heavy Turboprop (over 12,500 lb)			
Chief Pilot	$45,480	$45,000	(1.1)
Captain	36,130	34,010	(5.8)
Copilot	28,500	28,000	(1.8)
Mechanic	22,500	20,072	(10.8)
Light Turboprop (under 12,500 lb)			
Chief Pilot	$35,788	$38,035	6.3
Captain	28,354	28,000	(1.2)
Copilot	23,000	22,913	(0.4)
Mechanic	22,500	21,036	(6.5)
Cabin Class Piston Twin			
Pilot	$25,680	$30,000	16.8
Other Piston Twin			
Pilot	$27,500	$26,000	(5.5)
Turbine Helicopter			
Pilot	$31,896	$31,350	(1.7)
Mechanic	26,000	29,700	14.0

The *overall* increase in flight department median salaries from 1981 to 1982 was nil, with improvements highly dependent on individual company performance.

Figure 2

Utilization by Aircraft Type

	Hours Flown Per Year				
	High	Median	Low	Load Factor	Stage Length (nm)
Gulfstream II	1,000	612	400	4.9	731
Jetstar	450	350	200	3.2	483
Falcon	650	400	300	3.1	461
Sabre	750	575	295	3.3	460
HS 125	1,000	469	250	2.8	389
Westwind	1,300	550	400	3.1	375
Learjet	900	625	350	3.4	322
Citation	800	650	265	3.2	390
King Air	975	550	250	2.9	248
MU-2	600	425	300	2.2	200
Cheyenne	600	400	350	2.7	NA
Cabin Class Twin	500	480	300	2.1	293
Helicopter (All)	1,000	600	300	NA	NA

NA—Not available

Utilization was down slightly in 1982 reflecting the reductions in aviation department budgets. Load factors were up as companies strived to increase efficiency.

Figure 3

National Summary of Salaries

Turbojet/ Turbofan		G-II/III	Jetstar	Falcon	Sabre	HS 125	Westwind	Learjet	Citation
Chief Pilot	High	$72,000	$64,000	$62,500	$70,000	$64,000	$61,000	$60,000	$48,000
	Median	66,000	58,000	43,000	52,327	42,200	51,650	45,000	38,610
	Low	52,500	40,000	37,200	43,000	28,000	42,000	34,000	32,000
Captain	High	$64,020	$55,000	$42,200	$51,024	$44,250	$49,668	$45,000	$43,000
	Median	49,668	46,250	36,000	37,000	36,000	38,000	35,000	32,600
	Low	34,000	32,820	27,000	27,500	29,500	31,300	28,500	26,604
Copilot	High	$48,420	$42,000	$39,400	$38,313	$30,000	$39,645	$34,000	$29,100
	Median	32,580	30,100	28,875	28,453	24,000	27,480	26,600	22,000
	Low	27,480	21,200	23,000	22,000	20,000	25,750	20,000	18,000
Chief of Maintenance	High	$42,000	$40,000	$42,500	$45,000	$42,600	$37,336	$37,000	$37,600
	Median	36,830	32,400	33,800	36,145	35,000	34,330	30,500	31,000
	Low	24,000	30,000	26,400	30,000	28,550	25,000	28,000	25,000
Mechanic	High	$31,000	$31,928	$31,200	$31,200	$26,800	$27,564	$28,000	$27,000
	Median	27,000	24,420	26,400	24,000	20,000	24,528	23,640	21,000
	Low	20,460	20,000	21,600	16,250	16,640	20,460	16,500	18,000

Turboprop		G-I	King Air	MU-2	Cheyenne
Chief Pilot	High	$51,395	$43,000	$45,600	$39,050
	Median	45,000	42,570	35,500	37,500
	Low	43,000	34,000	28,000	30,000
Captain	High	$41,040	$37,000	$35,600	$36,500
	Median	34,010	28,000	31,280	32,275
	Low	31,000	23,500	20,000	21,200
Copilot	High	$33,155	$36,000	$26,225	$25,000
	Median	28,000	24,825	22,500	21,000
	Low	23,500	20,000	18,000	17,500
Mechanic	High	$25,080	$32,000	*	*
	Median	20,072	22,000		
	Low	19,708	16,000		

Other Fixed Wing		Cabin Class Piston Twin	Other Piston Twin
Pilot	High	$35,000	$33,640
	Median	30,000	26,000
	Low	28,000	22,500

Turbine Helicopter		S-76	222	109A	Gazelle	212	206	500D
Pilot	High	$42,000	$42,000	$36,000	$36,000	$41,225	$54,000	$29,000
	Median	35,550	30,000	30,000	28,000	35,900	33,600	26,400
	Low	23,000	23,000	27,600	25,000	26,550	24,725	NA
Mechanic (All Models)	High	$35,700						
	Median	29,700						
	Low	22,500						

*Mitsubishi MU-2 and Piper Cheyenne maintenance was reported as primarily on a contract basis. However, the median salary of those mechanics working on their company's MU-2 or Cheyenne turboprops was $24,500.

ployes, while nearly three-quarters of those questioned provided dental coverage. One chief pilot reported that his company had recently voted down a dental plan, partially because of the $15-per-month cost, a decision he had trouble understanding.

Company cars, when they were provided, were usually only for chief pilots. One chief pilot whose company supplied him with two cars (its business is automobiles) reported that the cars were considered as part of his pay, not an unusual arrangement.

Loss of license insurance is still comparatively rare, with roughly one-third of those surveyed reportedly covered. Some companies have an informal policy to reassign an employe who had lost his or her license to other duties.

Other benefits include the normal stock

options, bonuses and savings plans.

Salaries, it should be pointed out, vary with several factors, among them:

(1) length of time with the company;

(2) number and complexity of ratings held;

(3) overall experience;

(4) geographical area;

(5) the economic well-being of the worker's employer.

According to our survey data, there is little difference between the median salaries of personnel in fleet operations and those in single-aircraft departments. Obviously however, if a pilot is current in seven aircraft, he or she should be making more than his less versatile peers.

As always, the salary survey is meant to be a management aid. When budgeting flight department salaries, keep in mind that the salaries reported in our charts are just that—reported. B/CA's accuracy probability is considered to be plus or minus 5 percent of the *median* salaries listed.

As in past years, this survey was conducted by telephone. B/CA has a control group of over 100 flight departments that we try to contact each year. We have made no effort to qualify any of those flight departments contacted as being representative of industry pay scales or fringe benefits. Originally these flight departments were selected randomly by geographical area and type of equipment operated. To insure confidentiality the names of responding companies are separated from the responses. We believe that a telephone survey of aviation managers and chief pilots affords greater accuracy and eliminates any ambiguities. □

Figure 4

Annual Budget Requirements Based on the Consumer Price Index

	Intermediate Standard			Higher Standard		
Area	**Budget**	**% Increase**	**Index**	**Budget**	**% Increase**	**Index**
Urban United States	$26,081	5.4	100.0	$39,039	6.1	100.0
Metropolitan Areas	27,403	8.6	105.1	41,398	9.4	106.0
Nonmetropolitan Areas	24,593	9.2	94.4	35,282	9.9	90.4
Northeast						
Boston	$29,181	0.0	111.9	$44,722	0.3	114.6
Buffalo	26,049	2.1	99.9	36,296	1.8	98.1
New York City/No. N.J.	29,860	5.1	114.5	47,741	5.2	122.3
Philadelphia/So. N.J.	26,440	2.5	101.5	39,182	3.1	100.4
Pittsburgh	24,753	6.1	94.9	36,767	7.4	94.2
Nonmetropolitan areas	25,616	2.7	98.3	36,167	3.3	92.6
North Central						
Chicago	$26,423	6.9	101.4	$36,938	7.8	99.7
Cincinnati/Ky./In.	26,724	12.7	102.5	38,394	13.6	98.3
Cleveland	25,933	7.7	99.5	37,977	8.4	97.3
Detroit	25,602	4.2	98.2	38,311	6.1	98.1
Kansas City/Ks.	24,654	3.5	94.6	37,178	4.7	95.2
Milwaukee	26,500	2.3	101.7	39,155	10.3	100.3
Minneapolis/St. Paul	26,693	8.3	102.4	40,038	8.8	102.6
St. Louis/Il.	25,600	8.4	98.2	37,583	9.1	96.3
Nonmetropolitan areas	24,543	7.8	94.2	35,463	8.7	90.8
South						
Atlanta	$23,166	2.6	88.9	$34,463	3.2	88.3
Baltimore	25,446	3.0	97.6	38,594	4.2	98.9
Dallas	23,042	5.3	88.4	34,312	5.8	87.9
Houston	23,986	4.8	92.0	32,295	6.4	90.4
Washington, D.C./Md./Va.	26,016	4.7	107.5	42,136	6.1	107.9
Nonmetropolitan areas	23,102	9.4	88.6	33,308	10.1	85.3
West						
Denver	$26,024	5.8	99.8	$38,773	7.0	99.3
Los Angeles-Long Beach	25,541	5.9	98.0	39,310	7.8	100.7
San Diego	25,984	4.4	99.7	39,561	5.4	101.3
San Francisco-Oakland	27,246	2.8	104.5	41,154	4.2	105.4
Seattle	26,106	4.9	100.2	37,722	5.7	96.6
Nonmetropolitan areas	25,825	10.1	99.1	36,970	10.8	94.7
Alaska/Hawaii						
Anchorage	$33,566	6.8	128.9	$47,515	6.5	121.7
Honolulu	32,446	6.8	124.5	51,190	8.2	131.1

Middle and upper-income budgets for a typical family of four in specified urban metropolitan and nonmetropolitan areas are based on autumn 1981 Bureau of Labor Statistics data updated by B/CA according to the Consumer Price Index for each metropolitan area. Shown are percent increases through May 1982 over those appearing in B/CA's September 1981 report as well as indexes for each location. The indexes are percentages of the national norm and can be used to establish adjusted median salaries for specific geographical areas. Multiply any of the national median salaries appearing in the National Summary of Salaries Chart or the Comparative Salaries Chart by the index for an area, then divide by 100. Nonmetropolitan areas are urban communities with populations between 2,500 and 50,000 that are located outside of metropolitan areas. As usual, the CPI in metropolitan areas is higher than that in nonmetropolitan areas.

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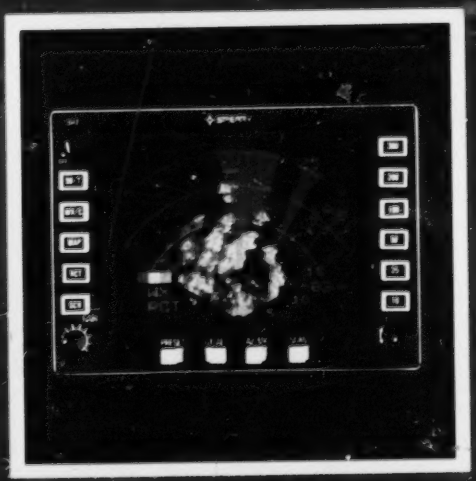
B/CA Analysis:® Piper's 602P

...he Future ...f Weather Radar



Business Aviation Within the Fortune 1,000

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B/CA Analysis®: Piper Aerostar 602P ____ 38

Piper has revamped the pressurized Aerostar's engine, turbochargers and pressurization system to create an owner-flown twin that performs better and is easier to fly than its predecessor.

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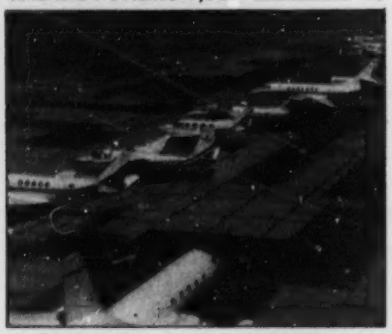

B/CA's annual analysis of the *Fortune* 1,000 companies indicates that those leading industrials that operate aircraft continue to outpace their nonoperating counterparts.

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Conservative policies have helped Transco's flight department compile 35 years of accident-free flying, but it is the department's innovative use of computers that has made it an efficient operation.

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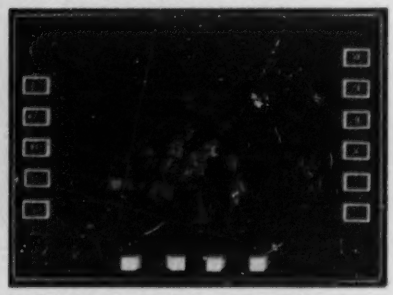

B/CA takes a look at some of the emerging technologies that promise significant improvements in weather radars for business aircraft in the next few years.

CLEARANCE DELIVERY

Sometimes you just get lucky.

Here we were, the 25th anniversary of B/CA fast approaching and with it a 40-page special section that would chronicle the birth, growth and maturity of not only the magazine but also the industry that gave it life. An important decision had to be made.

Who could handle such a large and difficult assignment? The author would have to be an accomplished professional who could take a huge volume of material and reduce it to an interesting, eminently readable history of B/CA and the business aviation industry. And he had to make our deadline for the January 1983 issue, too.

Who could write such an article from the perspective of one who was there? We needed an "insider" — a writer who understood two very complex industries, publishing and aviation — in order to satisfy ourselves and our readers, all knowledgeable insiders themselves. Yet the writer could not be too close to B/CA, lest the copy be self-serving.

Who, indeed, other than Bob Parke? As luck would have it, Parke retired from Ziff-Davis Publishing

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AIRMANSHIP
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Company in July after a 30-year tenure, the last five spent as a Divisional Vice President. Robert B. Parke started with Z-D as an Advertising Manager at *Flying* magazine in 1952. He became Editor and Publisher of *Flying* in 1967, holding that dual role until he assumed the VP post in 1975.

Parke's retirement merely meant that he was now available to accept free-lance assignments, no matter how large and difficult they might be.

We got lucky. We got Bob Parke.

THE COVER

B/CA's Technical Editor George Larson photographed Piper's 602P. Sperry provided the radar photo and Research Editor David W. Almy photographed the ramp scene for the *Fortune* 1,000.

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Business and commercial Aviation

Business Aviation and the *Fortune* 1,000

DAVID W. ALMY

More than half of the *Fortune* 1,000 industrial corporations operate aircraft, and if history is any indication, they will rebound faster and surer from the current recession.

by David W. Almy

Economic upheaval tends to severely test the mettle of even the most financially secure corporations. This past year has been no exception. And, once again, the operators of corporate aircraft have outpaced, in almost all areas, their nonoperating competition, according to an analysis of the 1981 financial performance of *Fortune* magazine's top 1,000 industrial corporations. The statistics were compiled recently by Aviation Data Service, Incorporated of Wichita.

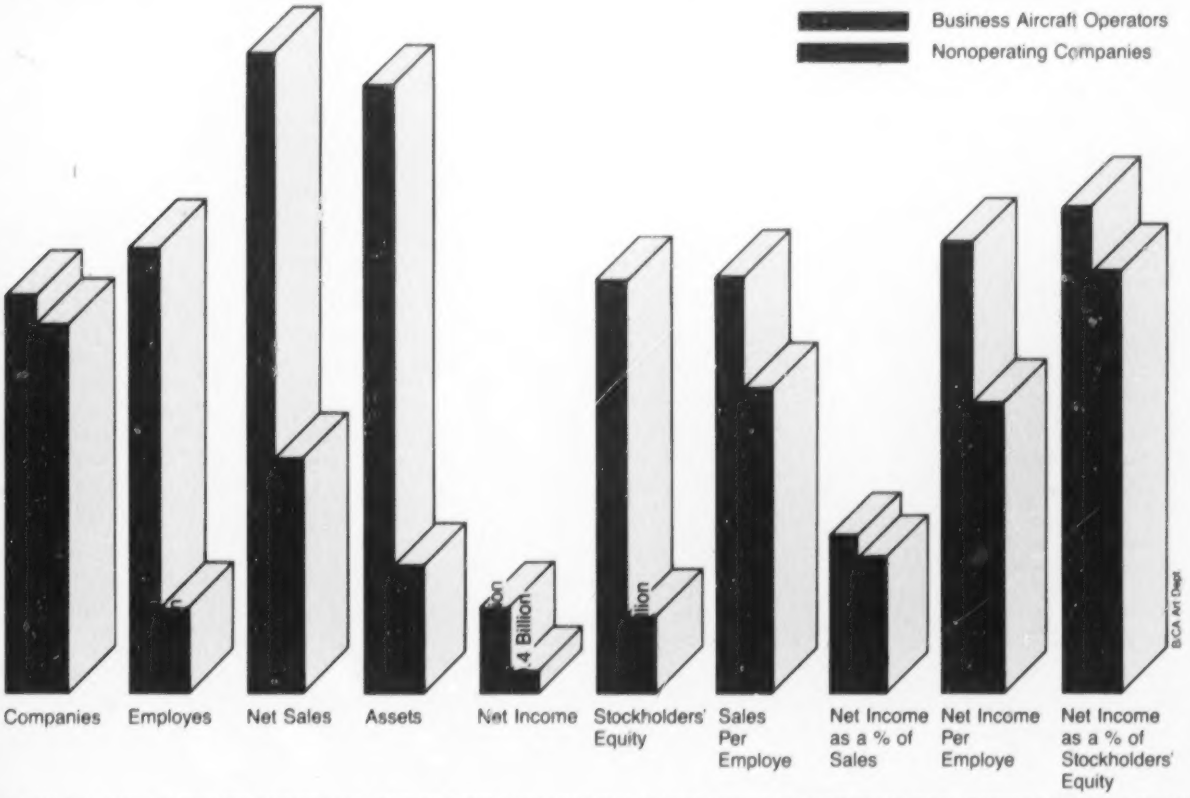
While the direct correlation between aircraft use and positive financial performance is not entirely clear, there remains the strongest circumstantial evidence in the aircraft operators' favor.

From a theoretical standpoint, if sound management is accepted as a prerequisite for superior financial performance, and the use of company aircraft represents sound management, then it follows that those companies operating aircraft should fare better than those that do not.

It would, however, be naive and somewhat simplistic to think that a company's use of business aircraft is solely responsible for that organization's prowess in the business world. Perhaps the statistical advantages held by the aircraft operating

Fortune 1,000 . . . *continued from page 45*

Figure 1 **Fortune 1,000 Summary**



In nine key areas of financial performance, *Fortune* 1,000 companies that operate aircraft far outdistance those *Fortune* 1,000 firms that do not fly aircraft. And indications are that these operators will recover faster from the recession than nonoperators.

companies reflect an aggressive management that has recognized (we think wisely) that business aircraft can make executives significantly more productive through increased access and more efficient travel.

The total number of aircraft operators among the *Fortune* 1,000 companies was down slightly last year to just under 54 percent of the total—536 in 1981 versus 541 in 1980—while the total size of the composite fleet was up substantially, from 2,012 in 1980 to 2,229 in 1981. However, the aircraft operators' large composite advantage in total net sales remains unchanged from the past two years at 87 percent.

One major change in the configuration of the *Fortune* 1,000 has been the elimination of the broadcasting and motion picture group. *Fortune* no longer considers these companies industrials. As a result, corporations like CBS and Twentieth Century Fox do not appear among the *Fortune* 1,000. The removal of the aircraft operators in this group partially accounts for the overall loss of five operators this year.

Companies operating aircraft in 1981 continue to perform better than nonoperators by every financial measure, and an analysis shows that the 536 companies that operate aircraft have 83 percent of the 17.2 million persons employed by the top 1,000 corporations, 87.9 percent of the $1.894 trillion in assets, 89.5 percent of the $90 billion in net income and 88 percent of the $633 billion in stockholders' equity.

In terms of productivity per employe or sales per employe, the gap between aircraft operators and nonoperators is increasing. Statistics show that the average sales per employe for operating companies was $115,555, compared with $82,241 for nonoperators. That is, companies operating aircraft sold 41 percent more than their competition on a per employe basis—an improvement of $3,438 over the nonoperators.

Even more striking is the difference in the area of net income per employe: Aircraft operators averaged $5,618 per employe compared with $3,255 for the nonoperators. And the operators increased their net income over last year by 10.7 percent while the nonoperators dropped 6.3 percent. The difference of $2,363 per employe puts this year's operators 73 percent ahead.

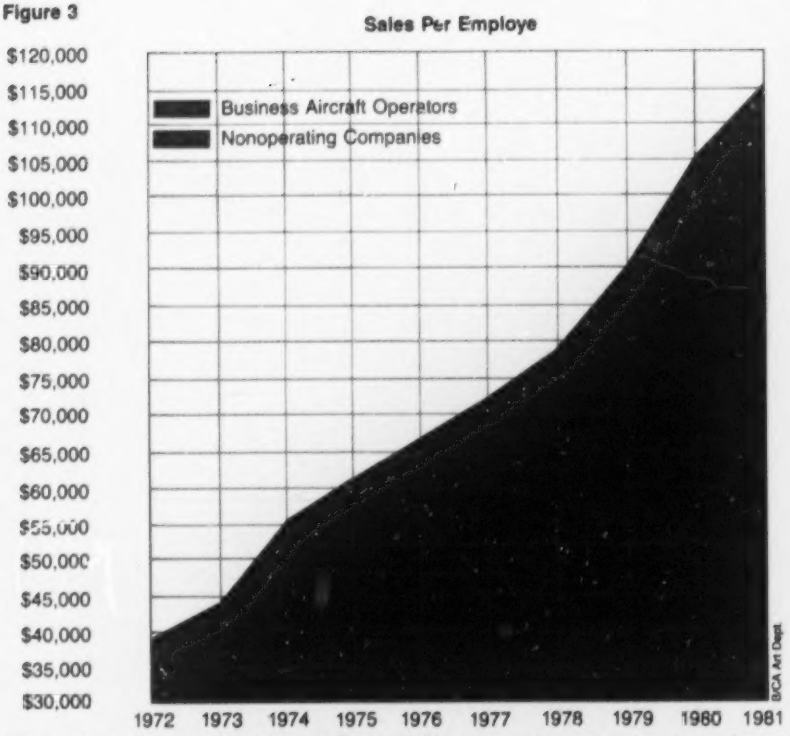
While the ratio between operators and nonoperators is not that large—536 versus 464—net sales of $1.66 trillion by aircraft operating companies was nearly seven times that of the companies that do not operate aircraft.

Figure 2

Comparative Fleet Size

Number of Aircraft	Number of Companies
1	165
2	112
3	87
4	35
5	25
6	20
7	21
8	10
9	7
10	5
11	11
12	4
13	7
14	4
15	4
17	1
18	4
19	1
20	1
21	3
22	2
26	1
27	1
32	1
34	1
37	1
42	1
45	1
2,229	536

Figure 3



Although annual sales per employe of *Fortune* 1,000 companies has increased over the last decade, firms that do not operate business aircraft only registered an increase that was little over half that of corporations that operate business aircraft.

Companies operating aircraft also outpaced nonoperators in total employment during 1981—14.3 million versus 2.9 million for the nonoperators.

The total *Fortune* 1,000 fleet was up in 1981 by a healthy 10.8 percent, versus 9.2 percent in 1980, while the average individual company fleet increased to 4.2 aircraft. Nearly a third of the operators—about 31 percent—operate only one aircraft. However, a dozen operators operate 21 or more aircraft (veritable miniature airlines) with the largest corporation flying 45 aircraft.

The average fleet size of the five largest operators was up to 38 aircraft in 1981 versus 34 in 1980. The five largest operators and their 1980 and 1981 fleet sizes were: Standard Oil of California, 37/45; Rockwell International, 36/42; Tenneco, 38/37; Mobil, 32/34; and E. I. Du Pont de Nemours, which recently acquired the aircraft of the Conoco Corporation following the merger of the two companies. The combined flight department has 32 aircraft.

Refiners Like to Fly

The *Fortune* 1,000 industrial corporations are traditionally broken down into 27 categories covering all areas of industrial production.

The largest concentration of aircraft operators within any category can be found among petroleum refiners: Thirty-eight of the 49 oil refiners in the *Fortune* 1,000 operate aircraft. While the refiners make up only 4.9 percent of the 1,000 companies on the *Fortune* list, they comprise 7.1 percent of the aircraft operators and fly 16.8 percent of the aircraft in the *Fortune* fleet.

Compared with all the other *Fortune* companies, the refining companies that operate aircraft account for 29 percent of the sales, 31 percent of the net income, 26 percent of the assets, 25 percent of the stockholders' equity, but only 7 percent of the employes.

Eighty-six percent of the *Fortune* fleet is operated by the top 500 companies, and 43 percent by the top 100 companies, based on net sales. Every company category has at least two operators (note that the category with only two operators (jewelry) contains only two companies), and the overall acceptance of business aviation in all categories is 53.6 percent.

For 1981, the *Fortune* fixed wing fleet consisted of 1,041 jets, 525 turboprops and 426 piston aircraft. One out of every ten aircraft was a turbine helicopter, and the number of twin engine rotorcraft in the *Fortune* inventory increased by 82 percent. There are now 71 of these aircraft flying for leading industrial corporations. Nine piston helicopters were registered in the *Fortune* fleet in 1981.

Figure 4

Groups	Companies		Aircraft Operated
	Operators	Nonoperators	
Mining, Crude Oil Production	21	13	74
Food	60	33	151
Tobacco	6	3	25
Textiles, Vinyl Flooring	16	18	30
Apparel	14	14	29
Furniture	5	5	8
Paper, Fiber & Wood Products	32	23	126
Publishing, Printing	17	28	52
Chemicals	38	29	169
Petroleum Refining	38	11	374
Rubber, Plastic Products	10	12	31
Leather	3	3	6
Glass, Concrete, Abrasives, Gypsum	22	8	52
Metal Manufacturing	31	28	102
Metal Products	30	33	106
Electronic Appliances	36	47	163
Shipbldg, RR & Transport Equip.	9	9	17
Measuring, Scientific, Photo Equip.	18	26	67
Motor Vehicles	20	12	106
Aerospace	14	6	181
Pharmaceuticals	11	10	37
Soaps, Cosmetics	6	12	15
Office Equipment (Computers)	7	19	46
Industrial & Farm Equipment	60	42	210
Jewelry, Silverware	2	2	2
Musical Instr., Toys, Sport Goods	7	8	14
Beverages	13	10	34
Average or Total	**536**	**464**	**2,229**

Older aircraft still constitute a considerable part of the *Fortune* fleet. The average year of manufacture for the entire fleet was 1973.

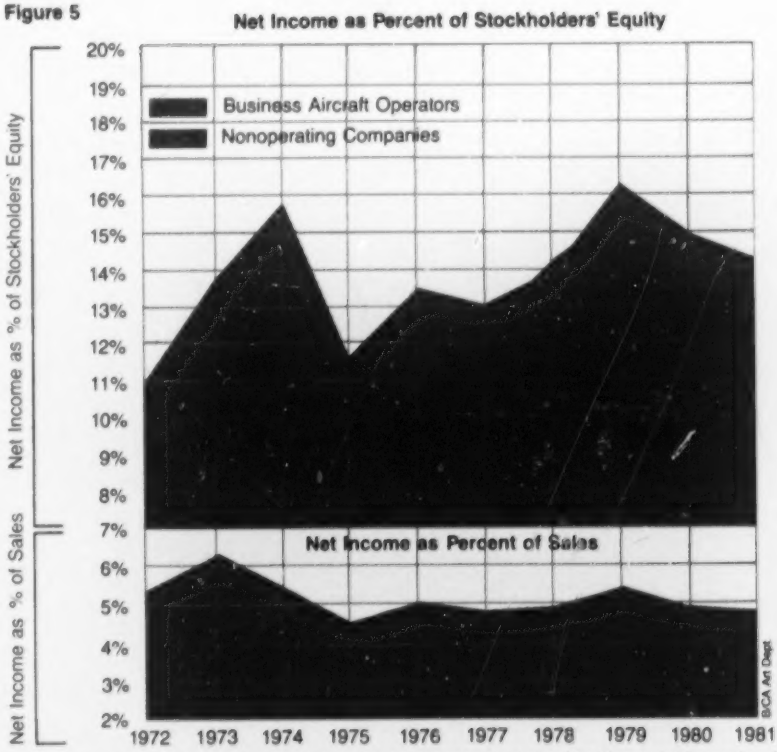
The average year of manufacture by aircraft type breaks down like this: jets, 1974; turboprops, 1973; piston airplanes, 1971; turbine helicopters, 1976; and piston helicopters, 1969.

But the age of the fleet hasn't kept its value down. Indeed, the 1981 fleet value has increased by 28 percent over 1980. Operators spent a total of $905.4 million for new and used aircraft in 1981, bringing the total value of the fleet to $4.11 billion. The average worth of the 2,229 aircraft operated by the *Fortune* 1,000 companies in 1981 was $1.84 million.

Overall, there were 29 aviation manufacturers vying for these top corporate dollars. Beech has placed the most aircraft (362) in the *Fortune* 1,000 fleet. Close on its heels comes Cessna with 357, Gulfstream American with 210, Dassault with 176, Gates Learjet with 163, Bell with 153 and Rockwell with 146. All other manufacturers have less than 100 aircraft each in service with *Fortune* 1,000 corporations.

A few odds and ends: Rockwell International has a P-51 Mustang registered in its name; Fairchild Industries has acquired a 1932 Kreider-Reisner "Challenger" C-2 (KR-31) biplane tieing Pepsi for

Figure 5



Despite a continuing decline in net income as a percent of stockholders' equity and a decrease in net income as a percent of sales among *Fortune* 1,000 companies, business aircraft operators continue to outperform nonoperators in these two areas.

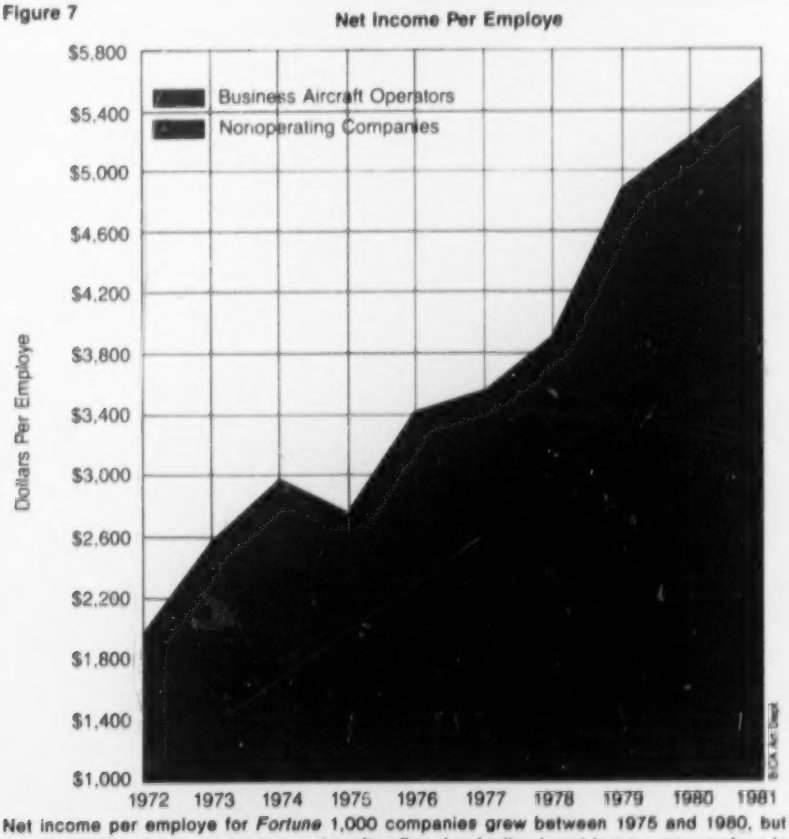
Sales Per Employe		Net Income As a Percent of Sales		Net Income Per Employe		Net Income As A Percent of Stockholders' Equity	
Operators	Nonoperators	Operators	Nonoperators	Operators	Nonoperators	Operators	Nonoperators
243,573	121,126	8.0	9.0	19,479	10,860	19.0	12.5
104,833	129,043	3.4	2.9	3,591	3,690	14.6	14.0
108,933	87,190	7.7	6.6	8,420	5,783	20.0	19.8
55,441	55,874	2.6	2.0	1,434	1,104	7.9	7.3
41,582	51,639	3.6	3.9	1,567	2,006	13.8	14.5
55,255	53,284	6.3	3.2	3,473	1,698	17.7	10.1
105,306	85,519	5.2	1.5	5,438	1,295	10.8	4.7
78,725	70,358	7.3	6.2	5,788	4,340	16.7	16.5
116,914	117,265	6.0	3.9	7,007	4,598	13.8	13.3
453,592	249,882	5.0	1.2-	22,648	2,936-	17.4	6.8-
74,441	68,397	3.4	2.8	2,535	1,905	11.4	9.7
50,885	42,070	4.2	3.3	2,130	1,367	14.8	10.4
76,262	89,114	3.9	3.7	2,964	3,314	7.7	8.6
110,963	105,575	4.3	5.9	4,755	6,212	11.0	16.5
72,299	74,027	4.2	3.7	3,019	2,704	13.0	11.3
62,993	56,681	4.9	4.5	3,067	2,559	14.9	13.6
73,385	78,982	3.3	3.8	2,440	2,964	14.1	11.8
66,040	61,334	8.8	4.2	5,836	2,594	17.3	9.9
84,771	105,814	0.1	3.1-	114	3,267-	0.5	56.9-
77,038	65,693	2.9	5.9	2,253	3,905	12.8	19.6
76,742	84,320	8.1	10.9	6,184	9,188	15.6	21.2
123,868	92,664	5.2	6.2	6,433	5,783	16.0	17.5
67,229	59,023	9.2	6.6	6,181	3,892	15.7	13.1
77,047	75,079	6.0	4.1	4,619	3,078	15.1	11.7
64,356	70,013	6.6	6.7	4,235	4,702	22.6	17.3
66,731	68,367	4.8	1.0	3,225	650	13.0	4.0
88,239	118,433	9.9	5.1	8,745	6,099	27.4	14.0
115,555	**82,241**	**4.9**	**4.0**	**5,618**	**3,255**	**14.4**	**12.5**

Figure 6

Business Aircraft Fleet Value
($ thousands)

	1979	1980	1981
Piston			
Single Engine	$ 3,454.6	$ 5,454.6	$ 7,114.0
Light Piston Twin	12,041.8	15,583.8	15,923.0
Pres. Piston Twin	9,627.7	11,922.7	11,311.4
Heavy Piston Twin	1,371.1	1,577.6	1,536.6
Pres. Piston four-eng.	124.7	139.7	135.5
Total	$26,619.9	$34,678.4	$36,025.5
Turboprop			
Light Turboprop	$209,005.3	$287,305.6	$344,766.2
Heavy Turboprop	50,808.7	98,722.5	101,861.3
Total	$259,814.0	$386,028.1	$446,629.5
Jet			
Light Jet (under 12,500 lb)	$ 61,246.5	$ 75,376.9	$ 75,620.6
Medium Jet (12,500 to 30,000 lb)	700,381.5	1,137,749.0	1,623,377.2
Heavy Jet (over 30,000 lb)	677,192.2	1,510,856.2	1,818,004.5
Total	$1,438,820.2	$2,723,982.1	$3,517,002.3
Helicopter			
Piston Helicopter	$ 842.2	$ 333.6	$ 415.2
Single Turbine Helicopter	20,628.7	30,017.3	41,222.0
Twin Turbine Helicopter	14,405.7	29,967.7	69,177.8
Total	$35,676.6	$60,318.6	$110,815.0
Grand Total	**$1,760,930.7**	**$3,205,007.4**	**$4,110,472.3**

Figure 7



Net income per employe for *Fortune* 1,000 companies grew between 1975 and 1980, but firms that did not operate business aircraft suffered a decline in net income per employe in 1981, while the net income per employe of operators continued to increase.

the honor of owning the oldest aircraft in corporate service (Pepsi is still using a 1932 Beech Travel Air for advertising); Northrop has acquired a Polish WSK Antonov AN2 transport (One can't help but wonder why) and finally, two *Fortune* 1,000 companies share aircraft with nonranking companies: Occidental Petroleum shares a Rockwell Sabreliner 65 with the Permian Corporation, and Texas Industries shares a Dassault Falcon 10 with Triangle Pacific Sharing.

Since we hope to be leaving the current economic malaise in the near future, we thought it might be interesting to check and see if, as a group, the *Fortune* 1,000 aircraft operators performed better coming out of that last recession than the nonoperators did. We came up with some interesting numbers.

The last time the economy did a snap roll was in 1974 and 1975. Despite the fact that 1976 was a year of recovery for the economy, 10 *Fortune* 1,000 companies thought it wise to add their names to the list of those operating aircraft, bringing the total to 502—the first time that operators outnumbered nonoperators.

Coming out of the recession of 1974 and 1975, sales for the nonoperating companies totaled $179.1 billion while sales for the operators amounted to $881.2 billion. These figures represented an increase over the year before (1975) of 6.2 percent for the nonoperators and 13.1 percent for the aircraft users. The figures indicate that *coming out of the last recession, aircraft operators grew at more than twice the rate of nonoperators.*

On a sales per employe basis, the nonoperators registered $48,502 in 1975, while the operators registered $60,894. As economic conditions improved in 1976, the nonoperators increased their sales per employe by only 7 percent to $51,897, while the operators' increase measured 9.1 percent to $66,460 per employe.

A further analysis based on net income per employe shows that the aircraft operating companies seem to be more resilient than their nonoperating counterparts. It seems that during bleak economic times, the operating companies far outdistance the nonoperators, while during better times, the relative difference is not as great.

The statistical evidence seems to indicate that companies with aircraft survive bouts of economic upheaval far better than their nonoperating competition.

One final note: Ten years ago, in the first B/CA survey of the *Fortune* 1,000 aircraft fleet, we counted 436 companies among the aircraft operators. Today there are 100 more. The trends are self-evident and foretell a promising future for those companies that have "discovered" business aviation. The trends are equally clear for those that have not. □